DOCUMENT RESUME

ED 093 965 TM 003 783

AUTHOR McCaulley, Mary H.
TITLE The Myers-Briggs Type Indicator and the Teaching-Learning Process.
PUB DATE Apr 74
NOTE 11p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, Illinois, April, 1974)

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS College Students; *Individual Characteristics; *Learning Processes; *Personality Theories; Predictor Variables; *Psychological Patterns; Teaching; *Typology
IDENTIFIERS Jung (Carl); *Myers Briggs Type Indicator

ABSTRACT

The Myers-Briggs Type Indicator (MBTI) was developed specifically to make possible the implementation of Carl Jung's theory of type and is concerned mainly with conscious elements of the personality. It assumes that to function well, an individual must have a well-developed system for perception and a well-developed system for making decisions or judgments. Four interacting preferences are used to generate each of sixteen types. In each type, one pole of each of the four preferences is preferred over the other, and through use becomes more highly developed. The four preferences are: Extroversion or Introversion, Sensing or Intuition, Thinking or Feeling, and Judgment or Perception. The types are described in detail and the concepts are illustrated with data from a sample of 3275 freshmen and transfer students who entered the University of Florida in September, 1972. An overview of research that has been conducted on the teaching-learning process with the MBTI is presented. Past data and present research indicate that the use of type as an organizing principle increases the power of prediction in educational research. (BC)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

20.24

BEST COPY AVAILABLE

ED 093965

TM 003 283

THE MYERS-BRIGGS TYPE INDICATOR AND THE TEACHING-LEARNING PROCESS

Mary H. McCaulley
Department of Clinical Psychology
Typology Laboratory - 108 SSRB
University of Florida
Gainesville, Florida 32611

Paper Presented as an Introduction to a Symposium Entitled

PERSONALITY VARIABLES IN THE TEACHING-LEARNING PROCESS

1974 Annual Meeting
American Educational Research Association
Session 20.24 April 18, 1974
Palmer House
Chicago, Illinois

- - - - - - - - -

Other Papers Presented at This Symposium

Personality Variables and the Middle School Teaching Learning Process

Gordon D. Lawrence & Richard DeNovellis, Curriculum & Instruction
College of Education, 287 Norman Hall, University of Florida

Personality Traits and College Student Reading Skills

Janet J. Larsen, Reading and Study Skills Center,
University College, 310 SW Broward Hall
University of Florida

Patterns of Perceiving: Personality Factors Which Affect Individualized Reading Instruction at the High School Level

Hellen I. Guttinger, P. K. Yonge Laboratory School,
College of Education, University of Florida

Personality Variables and the Improvement of College Teaching

Albert B. Smith, Office of Instructional Resources, and
Curriculum and Instruction, College of Education
340 Norman Hall, University of Florida

Discussant

Meridith D. Gall, Far West Laboratory for Educational Research and
Development, 1855 Folsom Street, San Francisco, California 94103

The Myers-Briggs Type Indicator and the Teaching-Learning Process

This symposium describes research using C. G. Jung's theory of psychological types to understand the educational process. Jung's types differ in two variables of critical importance in education-- perception and judgment.

In 1962 Educational Testing Service published an instrument, the Myers-Briggs Type Indicator, which was developed specifically to make possible the implementation of Jung's theory of type (Jung, 1923). "The gist of the theory is that much apparently random variation in human behavior is actually quite orderly and consistent, being due to certain basic differences in the way people prefer to use perception and judgment (Myers, 1962).

During the twenty years of developing the Indicator before it was published, Isabel Briggs Myers and her mother, Katharine C. Briggs, collected data showing understandable and predictable type differences in academic aptitude and achievement in samples from junior high school through medical school. Their findings were confirmed in data collected by Educational Testing Service, and have been reconfirmed since publication of the Indicator by researchers at Auburn University (Conery, 1965; Grant, 1965), at the University of Florida (May, 1972, McCaulley, 1973) and elsewhere.

Over the past four years, interest in the Myers-Briggs Type Indicator has grown until over 150 faculty and graduate students have been engaged in research or action projects to study type differences in teaching, learning, career choice and satisfaction, marital adjustment, and counseling. As a result of this interest, Isabel Briggs Myers, author of the Indicator, visits the University twice a year to share her 50 years of experience in studying Jung's theory, and 30 years of experience in developing the Indicator. She is directly and continuously supervising a body of work designed to individualize Type Indicator reports so that they can give useful suggestions for developing better command of perception and judgment. A computer program begun in 1970 has been continuously refined and is capable of preparing reports for subjects and data for researchers. The Laboratory has processed data on over 40,000 cases, from the University of Florida, and from schools, junior colleges, universities and medical schools throughout the country. At Florida in the past three years ten dissertations and ten theses have been completed, with a like number underway.

Despite the rapid use of the Type Indicator in recent years, many educators are still unfamiliar with the instrument, the theory, and the findings. This paper will give a brief overview of the major concepts and findings to put the succeeding papers in perspective.

I shall illustrate concepts with data from a sample of 3275 freshmen and transfer students who entered the University of Florida in September, 1972. The study was part of a larger study to improve academic advisement. Excerpts are available for those interested.

The Advantages of Types

A number of investigators have recently come to the conclusion that prediction can be improved if subjects are clustered into subgroups sharing common response patterns. Our work is in the context of these efforts.

Most of the new "typologists" use clusters derived from empirical manipulation of sample data, while research with Myers-Briggs types use groupings based on Jung's theory.

Jung's Theory of Types

Jung's theory of psychological types is only one small part of his personality theory and is concerned mainly with conscious elements of the personality. It assumes that to function well, an individual must have a well-developed system for perception (either Sensing or Intuition) and a well-developed system for making decisions or judgments (either Thinking or Feeling). In more familiar terms, there must be a way to perceive the Stimulus and to make an adequate Response.

A "type" is is a dynamic, not a static concept, and denotes the consequences of developing one's preferred ways of using his mind. The complexity in the theory comes from assumptions that in some types the dominant force in the personality is one of the perceptive processes, aided by a judging process. In other types, a judging process is the dominant force, aided and balanced by an auxiliary perceptive process. The types further differ in whether these dominant and auxiliary processes are used in the extraverted or introverted attitudes.

Four interacting preferences are used to generate each of sixteen types. In each type, one pole of each of the four preferences is preferred over the other, and through use becomes more highly developed. The four preferences are:

Extraversion [E] or Introversion [I]: A direction of interest and attention to the outer world of objects, people, and action (Extraversion) or to the inner world of ideas and contemplation (Introversion).

In our Florida student sample, majors attracting 60% Extraverts or more were Childhood Education, Business Administration and Psychology. Majors attracting 60% or more of Introverts were Electrical Engineering, Art, Zoology, Philosophy and Forestry.

In education, we predict that Extraverts will learn best if the concept follows experience; that Extraverts will prefer group learning and action projects, and that their attention span will be shorter, with much learning by trial and error.

We predict that Introverts will learn best if the concept precedes experience; that Introverts will prefer individual learning and enjoy library projects; that their attention span will be longer.

Sensing [S] or Intuition [N]. A preference for looking at the immediate, the real, the tangible, the solid facts of experience (Sensing) or for seeing the possibilities, meanings and relationships of experience, often with only a passing interest in the facts themselves (Intuition).

In our Florida student sample, the Majors attracting 60% or more of the practical, observant, realistic Sensing types were Childhood Education, Accounting, Physical Therapy, Nursing, Building Construction and Physical Education. Majors with 60% or more of the imaginative, theoretical, problem-solving Intuitive types were

History, Forestry, Sociology, Architecture, Occupational Therapy, Psychology, Chemistry, Journalism, English and Art.

The Sensing-Intuition Preference is so important in Education that an entire section of the paper will be devoted to it later.

Thinking [T] or Feeling [F]. Jung considered both Thinking and Feeling as rational processes used in decision-making. Thinking is a preference for making decisions objectively, impersonally, analyzing the facts and ordering them in terms of antecedents and consequences. Feeling decides by a valuing process, weighing the importance of alternatives to oneself or others. Thinking types tend to prefer working with materials which follow logical principles; Feeling types are more interested in working with or studying people.

Majors attracting Thinking types were Building Construction, Electrical Engineering, Political Science and Business. Majors attracting Feeling types were Education, Health Related Occupations, English, Sociology and Art.

In education, we predict that Thinking types will score higher on tests of mathematics and science, and that Feeling types will score higher on tests of social sensitivity.

Judging [J] or Perception [P]. A preference for living in a planned, decided, orderly way, aiming to regulate life and control it (Judging) or to live in a flexible, spontaneous way, aiming to understand life and adapt to it (Perceptive).

Majors with 60% or more of the systematic Judging types were Electrical Engineering, Accounting, Nursing, Veterinary Medicine, Physical Therapy, Engineering, and Childhood Education. Majors with 60% or more of flexible Perceptive types were Forestry, Psychology, History, Journalism, English, Art and Occupational Therapy.

In Education, we predict that Perceptive types, with their open, curious, receptive attitude will pick up more information, and score higher on intelligence; and that Judging types, with their systematic, orderly attack on problems, will make better use of their capacities, and get better grades.

A type is designated by four letters, ESFJ, INTP, a shorthand for the complex interactions of the theory. All sixteen types have their own excellences, and each type has its own pitfalls to avoid.

A Description of Two Types: ESFJ and INTP

The following description of two types which differ on every preference will show why and how type differences show up in education.

ESFJ: An Extraverted Feeling Type with Sensing

As an Extravert [E], ESFJ is oriented more to the outer world of people and things than to the inner world of ideas.
As a Sensing type [S], ESFJ would rather work with known facts and rely on solid experience than to look for possibilities or meanings.

As a Feeling type [F], ESFJ bases judgments more on personal values than on impersonal logic. With Extraverted Feeling the dominant force in the personality, ESFJ develops a keen interest in and sensitivity toward interpersonal relationships.
As a Judging type [J], ESFJ likes a planned, decided, orderly way of life better than a flexible, spontaneous one.

Myers (1962) gives the following description of ESFJ in high school:

"Warm-hearted, talkative, popular, conscientious, interested in everyone, a born cooperator and active committee member. Has little capacity for analysis or abstract thinking, and so has trouble with technical subjects, but works hard to master the facts in a lesson and win approval. Works best with plenty of praise and encouragement. Always doing something nice for someone in a practical way."

ESFJ's are found in large numbers in careers with active involvement with people. This is the only type among Auburn freshmen which put "Being of Service to Others" as the most important characteristic if an ideal job. At Auburn they were attracted to Education and were significantly uninterested in Engineering and Mathematics. At Florida, they were significantly attracted to Education, Nursing, and Physical Education, and significantly uninterested in the Behavioral and Physical Sciences. In the Myers longitudinal study of 5350 medical students, ESFJ went into Pediatrics and stayed out of Psychiatry.

In Conary's study of Auburn freshmen, ESFJ were 12.5% of the class. None fell in the top quartile of the American College test, 19% fell in the lowest quartile. In the Florida data, ESFJ ranked 16th among the types in Florida Twelfth Grade Placement scores and 16th in SCAT; they ranked 12th among freshmen in first quarter grades.

INTP: An Introverted Thinking Type with Intuition

An Introvert [I], INTP is oriented more to the inner world of concepts and ideas than to the outer world of people and things.
As an Intuitive type [N], INTP would rather look for relationships and possibilities than work with known facts.
As a Thinking type [T], INTP bases judgments more on impersonal logic than on personal values.
As a Perceptive type [P], INTP likes a flexible, spontaneous way of life rather than a planned and orderly one.

Myers describes the INTP in high school this way:

"Quiet, reserved, brilliant in exams, especially in theoretical or scientific subjects. Logical to the point of hair-splitting. Has no capacity for small talk and is uncomfortable at parties. Primarily interested in his studies and wouldn't care to be president of his class. Liked by his teachers for his scholarship and by the few fellow-students who get to know him for himself."

Myers found that 6% of her 3500 male college preparatory students described themselves as INTP. In college samples they were attracted to science, engineering and medicine, and few were in business. In

Medicine, INTP chose Neurology, Pathology, Psychiatry and medical research; they stayed away from Obstetrics and Gynecology.

In Myers data on boys in college preparatory courses in 30 Pennsylvania high schools, INTP ranked highest in intelligence and second highest in grades. In our Florida sample, INTP freshmen ranked first among the types in Florida Twelfth Grade Placement scores, SCAT V and M, and SAT V and M. In transfer students, INTP ranked 3rd in Florida Twelfth Grade scores and SCAT. In first quarter grades, INTP ranked first among freshmen, and 4.5 among transfer students.

At both Florida and Auburn, INTP were attracted to Arts and Sciences and Engineering, and were unintsrested in Education and Business.

I hope these two descriptions of opposite types of students are familiar, and that you have known students who found their roads to excellence in quite different directions. You may also have intuited that such opposite types may have difficulty in communicating with each other, and will perhaps understand why, empirically, types opposite on all four preferences seldom marry each other.

Jung's theory assumes that in maturity a person can use the 8 processes described above, readily and effectively as the occasion demands. That is, one sometimes takes the Extraverted attitude in attending to what is outside, and sometimes the Introverted attitude in attending to the inner world of concepts and ideas. He at times focuses his attention on what the situation actually is [S] and at other times is seeing possibilities of what it might become [N]. He sometimes makes decisions logically and objectively [T] and at other times he chooses by what he cares most deeply about [F]. Sometimes he is planful and systematic [J] and at other times flexible and spontaneous [P].

The theory assumes that one pole of each preference has a greater appeal, and that a child, unless hindered, will use the preferred way whenever he can, developing and strengthening it through use. He is likely to be less expert in the non-preferred poles of his preferences, and less likely to choose activities requiring heavy reliance on his less-developed capacities.

Myers presents data that being clear about a preference is associated with higher achievement and confusion about a preference, particularly Thinking-Feeling is associated with underachievement. We shall be testing her findings in our Laboratory. If replicated, the findings will support our belief that helping children develop better command of perception and judgment will increase their capacity to learn.

The Importance of The Sensing-Intuition Preference

Sensing Types have been described as the types who are more interested in the immediate data received through their senses, while Intuitive types are more interested in perceiving the relationships, meanings, and possibilities suggested by experience. Developing one or the other of these modes of perception has the following consequences:

	Sensing Types	Intuitive Types
Interested in:	Doing something with tangible objects	Language, spoken or written
Value perception which is:	Sound	Quick
Typical approach	Cue attendance	Hypothesis generation
Work approach	Steady, step-by-step	Bursts of energy
Reach the new through:	Steps from present experience	Intuitive leaps
Reading	Less interest and skill	More interest and skill
Excellence comes from:	Practical realism	Vision of the future
Test Performance:		
Written, essay	Score lower	Score higher
Comprehension	Score lower	Score higher
Timed	Score lower	Score higher
Power	Greater gains over timed	Lesser gains over timed
Intelligence & Aptitude (ACT, SCAT, SAT, MCAT, etc.)	Score lower	Score higher
Direct tests of skills	Score same or higher	Score same or lower
Populations		
General population	Estimated 65% to 75%	Estimated 25% to 35%
500 adults who did not finish 8th grade	99.6%	0.4%
168 rural 7th graders	78%	22%
135 underprivileged university students	78*	22%
118 rural high school	72%	28%
198 university high "	54%	46%
605 elementary & middle school teachers	58%	42%
1430 non-academic 11th and 12th graders (Pa.)	85%	15%
3503 academic 11th and 12th graders (Pa.)	58%	42%
3676 Ivy League freshmen	51%	59%
1709 Auburn freshmen('54)	65%	35%
2514 Florida freshmen('72)		
1001 National Merit Scholarship Finalists	18%	82%
MacKinnon's Creative:		
Architects (40)	0%	100%
Research scientists(30)	0%	100%
Creative writers (17)	12%	88%
" mathematicians(28)	4%	96%

In short, Intuitive types, with their greater interest in, and developed skills with symbols, score higher on most aptitude tests which are designed (usually by intuitive types) to test verbal skills, speed of comprehension, ability to draw inferences--those aspects of "intelligence" especially valued by Intuitive types. Since Sensing types often read test questions several times, to make sure their perception is sound,

they are particularly likely to be at a disadvantage in timed tests. [Our laboratory recently processed an unusual sample, in which the ESTJ's received the highest number of A's in the midterm and final of a course. The ISTJ's also did well and the Intuitive types, particularly the usually high-scoring Intuitives with Feeling, scored low. On further investigation we discovered the instructor of the course is an ESTJ. We are beginning to think an intensive look at how types perform on different kinds of examinations will be informative.]

The Intuitive types are outnumbered in the population by the Sensing types, two or three to one. In the grades, there are likely to be only two or three Intuitive types in a class, taught by a Sensing type as a teacher. Many report earning early that school is a bore, never a challenge. These children are in danger of getting by on flash rather than solid competence, and often come to college with poorly developed skills for persistence in academic achievement.

As can be seen from the listing above, the higher one goes in the academic ladder, the greater the proportion of Intuitive types in a sample. Higher education, with its demand for complex problem-solving, and for working at an abstract, theoretical, or imaginative level, suits the interests of the Intuitive types.

The Introverts with Intuition are the most "academic" of the types, interested in concepts and ideas (Introversion), theory, abstraction, complexity (Intuition). The Extraverts with Sensing are the most pragmatic of the types--interested in theory only if it has immediate application. With Extraverts outnumbering Introverts, and Sensing types outnumbering Intuitive types, it is clear that the schools have a large number of students to teach whose best road to knowledge is through active experience, not second-hand reading of books. The old-time school, with its emphasis on sitting still in one's seat and reading to memorize facts, probably fitted the Introverted Sensing types who have an interest in finding the facts to support ideas. Many teachers in Florida are beginning to look at all our teaching methods, to see which methods are most attuned to the different types of students.

What are Teachers Like

Several main points about teachers will suffice to introduce the panel.

First, as would be predicted, Feeling types outnumber Thinking types, with the percentage of Feeling types in different student and teacher populations ranging from 60% to over 80%. The only teacher sample thus far with equal numbers of Thinking and Feeling types is a sample of mathematics teachers.

Second: Large numbers of teachers, especially at the elementary and middle school level, prefer Sensing and Feeling--these are the sociable and friendly types who have a special gift for working with people at an immediate, practical level. In high school, and even more in college, the Intuitives with Feeling are in the majority-- these are the enthusiastic, insightful types, nurturing the young at a more abstract, intellectual level.

Third: We are beginning to learn that teachers can expand their repertoire to communicate with types different from themselves, but that it is not as easy to change one's style as we would hope. We are beginning to look

more closely at teams of teachers, and at the student-teacher interactions of different combinations of types. Gordon Lawrence will be describing some of this work.

Fourth: We are seeing a trend previously reported in a Canadian study, that more innovators are being trained than are found in the schools. When we find the naturally innovative types in the schools, they are likely to be in innovative programs; more of them are found in graduate school, or workshops in humanistic teaching. We are beginning to seek ways to train innovative Intuitive types with the practical Sensing types, in the hope of developing teams that will gain from the richness of the two equally valuable ways of looking at the educational process.

Analysis and Presentation of Data

Type theory assumes that type preferences lead to qualitative, not merely quantitative differences in people. The Type Indicator was designe to show the direction of preference, more than the strength of preference. In developing the Indicator, great care was taken to increase the likelihood that people with an even vote for the two poles of a preference will fall on the side where they "truly" belong.

Researchers in psychology and education find it difficult to work with variables which are not assumed to be normally distributed and continuous. There is a standard transformation of Preference scores, to give "continuous scores" but they are used with the understanding that they violate assumptions of the theory. Continuous scores have been widely used in studies of construct validity, to see if the scales correlate with other instruments in the predicted directions.

A methodological problem occurs because the types are not equally distributed in the population and, as we have seen, different populations have characteristic type patterns. As a psychologist, I have been particularly concerned with the amount of our research done with students in Introductory Psychology. Even at the Introductory Level, these courses are so weighted with Intuitive Feeling types that I wonder if we can generalize at all to types with Sensing and Thinking. How many negative findings have masked positive results with some of the rarer types in the sample? How many failures to replicate came because the distribution of types in the two samples was different?

A major task of our Laboratory for the next several years is to conduct a series of analyses using different statistcial approaches to determine the results of using each method in specific problems. Out of this work we hope will come a more standard way of reporting type data for comparability in research. In the meantime, we are asking researchers to supplement their sophisticated multivariate approaches with analyses by the 16 types, and presentation of data in type table format, where main effects and predicted groupings can be readily seen. In the early years after publication of the Indicator, it was assumed that type differences were less meaningful than differences in analysis of the four preferences separately, but more recently researchers are reporting better prediction from the types themselves (Carlson & Levy, 1973, Cooary, 1965, Levy, Murphy & Carlson, 1972; McCaulley, 1973; Stricker & Ross, 1964a, 1964b; Stricker, Schiffman & Ross, 1965.)

Internal consistence reliabilities of continuous scores generall fall in the .70's and .80's. The T-F scale often has somewhat lower reliabilities, particularly in underachieving samples. Test-retest reliabilities of continuous scores range from .60 to .83 in four samples retested after intervals of two months to 21 months. Percentage of cases falling in the same preference category on retest ranges from 59% to 88%. (McCaulley and Tonesk, 1974).

In summary, past data and our own present researches are convincing many of us at the University of Florida that the use of type as an organizing principles increases the power of prediction in educational research. We see ourselves at the stage where the broad outlines are clear, but a wealth of detail needs to be filled in with systematic studies of both teachers and students. In the classroom, and in the laboratory we are finding type differences in learning style, teaching style, motivation, aptitude and achievement. The terminology of type is unfamiliar, but experienced teachers have long recognized the processes of type. They report that type theory has given them a powerful tool in understanding why they can reach some students more easily than others. Many teachers report increased respect for colleagues and students whose minds work differently from their own.

The four papers which follow describe our findings in four areas. Gordon Lawrence will discuss the use of the Type Indicator in helping teachers understand themselves and their students, and will report his obversations of how different types of teachers behave in the classroom. Janet Larsen will discuss her work in using the Type Indicator to help college students improve reading and study skills. Hellen Guttinger will tell us about the teachers and students involved in individualized reading programs in the public schools. And Albert Smith will describe the work he is doing with college faculty trying to improve their teaching. And perhaps, if there is time, he can throw in a word about the results if a self-paced learning project in the College of Engineering.

- - - - - - - - - -

References

Carlson, Rae & Levy, Nissim. Studies of Jungian Typology: I. Memory, social perception, and social action. Journal of Personality, 1973, 41, 559-576.

Conary, F. M. An Investigation of the Variability of Behavioral Response of Jungian Psychological Types to Select Educational Variables. Unpublished doctoral dissertation, Auburn University, 1965 [65-13,898]

Grant, W. H. Behavior of MBTI Types. Research Report, Student Counseling Service, Auburn University, Auburn Alabama 1965.

Jung, C. G. Psychological Types. London: Rutledge & Kegan Paul, 1923. [New translation, Princeton-Bollingen Press. Volume 6 of Complete Works].

Levy, N. Murphy, C. & Carlson, R. Personality types among Negro college students. Educational and Psychological Measurement, 1972, 32, 641-653.

May, Daryle C. An Investigation of the Relationship Between Selected Personality Characteristics of Eighth Grade Students and their Achievement in Mathematics. Unpublished doctoral dissertation, University of Florida, 1971.

McCaulley, M. H. Myers-Briggs Type Indicator Applications. Typology Laboratory, Department of Clinical Psychology, University of Florida, 1973.

McCaulley, M. H. & Tonesk, X. The Myers-Briggs Type Indicator in Medical Education: A Status Report. Washington, D. C. Association of American Medical Colleges. (1974 in preparation.)

Millett, R. F. Reading Performance as a Correlate of the Personality Type of College Freshmen. Doctoral research underway, University of Florida, 1974.

Myers, I. B. Manual: The Myers-Briggs Type Indicator. Princeton: Educational Testing Service, 1962. [Available from The Office of Special Tests, Educational Testing Service, 17 Executive Park Drive, N.E., Atlanta, Georgia 30329.]

Otis, C. D. Types of Medical Students. Albuquerque, New Mexico: New Mexico College of Medicine. Report published pursuant to Contract No. NIH-71-4066 with U. S. Public Health Service, HEW.

Rudisill, E. M. An Investigation of the Relationship between Mathematics Teachers' Personality Characteristics as Measured by the Myers-Briggs Type Indicator, and their Preferences for Certain Teaching Strategies. Unpublished doctoral dissertation, University of Florida, 1972.

Stephens, W. B. Relationships between Selected Personality Characteristics of Senior Art Students and their Area of Art Study. Unpublished doctoral dissertation, University of Florida, 1972.

Story, C. E. An Analysis of the Relationships between Personality Types of Mathematics Teachers (7-12) as Measured by the Myers-Briggs Type Indicator, and Selected Factors Related to Teaching. Unpublished doctoral dissertation, University of Florida, 1972.

Stricker, L. & Ross, J. An Assessment of some Structural Properties of the Jungian Personality Typology. Journal of Abnormal and Social Psychology, 1964a, 68, 62-71.

Stricker, L. J. & Ross, J. Some correlates of a Jungian personality Inventory. Psychological Reports, 1964b, 14, 623-643.

Stricker, L. J., Schiffman, H. & Ross, J. Prediction of College Performance with the Myers-Briggs Type Indicator. Educational and Psychological Measurement, 1965, 25, 1081-1095.

Williams, D. L. An Analysis of the Interrelationships among Elementary School Teachers' Personality Types, Beliefs, Observed Classroom Practices, and Reports of How Broadcast Instructional Television Should Be Used. Unpublished doctoral dissertation, University of Florida, 1972.

Note: Educational Testing Service has an annotated bibliography for research with the Myers-Briggs Type Indicator from 1962 through 1967.